

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Unlicensed Operation in the TV Broadcast Bands)	ET Docket No. 04-186
)	
Additional Spectrum for Unlicensed Devices)	ET Docket No. 02-380
Below 900 MHz and in the 3 GHz Band)	
)	

To: Office of the Secretary,
ATTN: The Commission

COMMENTS OF COX BROADCASTING, INC.

Cox Broadcasting, Inc. ("Cox"), by its attorneys, hereby submits these comments in response to the Commission's *Notice of Proposed Rulemaking* in the above-captioned proceeding.¹ Through subsidiaries, Cox owns fifteen commercial television stations licensed to various-sized communities throughout the United States and broadcasts on the spectrum proposed to be shared with unlicensed devices. In response to the earlier *Notice of Inquiry* in this proceeding, Cox urged the Commission to refrain from the actual introduction of any unlicensed devices into the broadcast spectrum until at least after the close of the DTV transition. Cox concluded that such timing was in interest of all parties, as it would allow manufacturers to prove that these novel unlicensed devices would be capable of preventing interference to incumbent operations. Cox continues to believe that, with the channel election process underway and an end to the DTV transition in sight, waiting until the end of the DTV transition to authorize the

¹ Unlicensed Operation in the TV Broadcast Bands, ET Docket Nos. 04-186, 02-380, *Notice of Proposed Rule Making*, FCC 04-113 (rel. May 24, 2004) ("*NPRM*").

marketing and use of shared devices in the broadcast spectrum will best serve the public interest – whatever regulatory regime the Commission ultimately implements.

The Commission's unlicensed device policies are intended to minimize harmful interference and optimize widespread usage – without unduly restricting the types of applications that may be offered. By implementing these policies, the Commission has unleashed market forces that have produced a wide variety of innovative and commercially successful Part 15 products. It accordingly is understandable that the Commission would seek to expand on these successes by providing additional spectrum for unlicensed use.

Cox believes, however, that the Commission should not open broadcast spectrum to these types of devices at least until the DTV transition is complete. Both the Commission and Congress recently have indicated an intention to end the DTV transition relatively soon, and a schedule is in place for channel elections.² Until the transition is over, there are significant risks to introducing additional unknown and uncertain elements. The technology necessary to ensure that unlicensed devices function properly in a congested spectrum environment and do not harm television viewers still is under development and likely cannot be proven reliable until the close of the DTV transition. Attempting to introduce such devices now not only threatens television viewers but also may severely curtail or even thwart the success of unlicensed devices. Indeed, with the error risk so high and the error cost so great, the Commission should consider abandoning the notion of unlicensed operations sharing spectrum with incumbent television stations and instead consider the benefits of licensing “vacant” spectrum that would exist after the DTV transition is over. Such a licensed regime is better structured for resolving interference

problems that inevitably would arise with the introduction of new technology such as contemplated here.

I. TO FACILITATE THE DEVELOPMENT OF THESE “SMART” DEVICES, THE COMMISSION SHOULD FOCUS ON CREATING CERTAINTY AND PREVENTING INTERFERENCE.

The Commission’s Part 15 rules and equipment authorization procedures are designed to ensure that unlicensed devices are unlikely to cause harmful interference to licensed operations or each other.³ The resulting certainty gives entrepreneurs and engineers confidence to invest in developing unlicensed devices and related services – and in turn gives consumers the confidence to make them commercially successful. Although the Commission’s rules prohibit operators of unlicensed devices from causing actual interference to licensed operators, widespread usage and source identification difficulties make case-by-case enforcement of interference rules virtually impossible.

As such, the Commission has declined to adopt an after-the fact approach to preventing interference from unlicensed devices and instead relies on design constraints – an *ex ante* approach Congress authorized in 1968 by empowering the Commission to “deal with the interference at its root source” and shift from “an after-the-fact approach to controlling interference.”⁴ This approach provides reasonable assurances that unlicensed devices will not cause interference; and therefore also provides reassurance that, once approved, these devices

² Second Periodic Review of the Commission’s Rules and Policies Affecting the Conversion to Digital Television, MB Docket No. 03-15, *Report and Order*, FCC 04-192 (rel. Sept. 7, 2004) (“*Second Periodic Review*”); *see also* Save Lives Act, S. 2820, 108th Cong. (2004).

³ *See, e.g.*, Revision of Part 15 of the Commission’s Rules Regarding Ultra-Wideband Transmission Systems, *First Report and Order*, 17 FCC Rcd 7435, ¶ 6 (2002).

will continue to operate properly and reliably. There is no justification for the Commission to abandon this approach now, but that precisely is what the Commission is considering by proposing to introduce these novel “smart” devices into a spectrum environment undergoing unprecedented upheaval. Even with the proposals advanced by the *NPRM*, including the requirement that unlicensed devices transmit unique identification information,⁵ the regulatory certainty necessary to create a successful environment for unlicensed device operation in the broadcast spectrum will not be available at least until the end of the DTV transition. The Commission should continue to adhere to its current policies regarding unlicensed operations, and if it cannot obtain or provide assurances that the shared operation of these “smart” devices in the broadcast spectrum will satisfy the Commission’s *ex ante* approach, then it seriously should consider imposing a licensed – instead of unlicensed – regulatory regime.

II. THE COMMISSION SHOULD NOT INTRODUCE “SMART” DEVICES INTO THE BROADCAST SPECTRUM UNTIL THE DTV TRANSITION ENDS.

A. With Licensed Operations in Flux, the Commission Should Avoid Creating Additional Uncertainty for Broadcasters and Device Manufacturers.

To the extent the Commission chooses to implement an unlicensed regime for shared operations in the broadcast spectrum, it should not allow unlicensed devices to operate on the broadcast spectrum until the end of the DTV transition. Too many DTV and spectrum issues are unsettled – and will remain so until the transition ends. Introducing unlicensed operations into this broadcast environment likely will harm viewers, broadcasters, unlicensed device manufacturers, unlicensed operators, and prospective unlicensed device users.

⁴ S. Rep. No. 90-1276 (1968), *reprinted in* USCCAN 2486, 2488, reporting enactment of 47 U.S.C. § 302(a).

⁵ *NPRM* at ¶¶ 22, 25.

Fundamental spectrum issues remain unsettled. The process for electing post-transition television channels only recently has begun, and, until this has progressed significantly further, there will be no real sense of the amount or location of vacant spectrum “permanently” available for unlicensed operation when the DTV transition ends. Furthermore, whatever spectrum is available will vary significantly from market to market. Under these circumstances, it will not be possible for some time to prove with reasonable certainty that unlicensed devices can dynamically ascertain unoccupied frequencies as the Commission contemplates,⁷ especially outside the laboratory in a congested spectrum environment. Moreover, Cox is unaware that the Commission has any experience with the magnitude of power disparity as here between the shared high-power licensed operations and low power unlicensed operations,⁸ casting further doubt on the reliance broadcasters and unlicensed device manufacturers and operators can place on anything short of incontrovertible post-transition testing.

DTV operational issues are unsettled as well. New technologies, such as the distributed transmission networks envisioned for DTV broadcast, significantly could alter the dispersion of transmitted energy throughout stations’ service areas – and alter the service areas themselves. Although the Commission has approved the concept in principle, it has yet to establish any rules.⁹ Additionally, broadcasters are positioned to engage in facilities-based competition with

⁷ *NPRM* at ¶ 17.

⁸ This includes addressing the inevitable blanketing interference, which occurs when an undesired signal is sufficiently strong to overpower components of a relatively nearby receiver.

⁹ Second Periodic Review, ¶ 177. See also, *NPRM* at ¶ 23.

the provision of expanded services beyond HDTV in the form of multicasting and datacasting,¹⁰ but with technology still developing and regulatory issues such as cable carriage unsettled, broadcasters cannot yet create business plans with reasonable confidence. Also, broadcasters face the very real prospect that Congress or the Commission will impose a so-called “hard date” for ending the DTV transition in the not-so-distant future.¹² Although this would hasten the day when unlicensed devices could be introduced into the television spectrum, broadcasters and the Commission will need to devote significant resources to meet such a schedule. The addition of new and insufficiently tested unlicensed devices into this environment would make it more difficult to expeditiously end analog service – and successfully introduce unlicensed operations.

Allowing unlicensed devices to operate in broadcast spectrum before these issues surrounding the DTV transition are more fully resolved not only would complicate the implementation of digital television and efforts to solve problems with nascent technology, but unlicensed devices could be blamed – correctly or otherwise – as the cause of the problems. Any unexpected interference significantly could degrade the functionality of approved unlicensed devices, undermining their reliability and damaging their potential for commercial success. Moreover, if unlicensed devices are permitted too soon, manufacturers will lack the certainty necessary to develop functional devices or justify sufficient investment. Accordingly, it is in the

¹⁰ See, e.g., Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service, MM Docket No. 87-286, *Fifth Report and Order*, 12 FCC Rcd 12809, ¶¶ 27-36 (1997).

¹² See, e.g., “Powell Wants to Wrap Up Outstanding DTV Issues by Year End,” *Communications Daily*, Oct. 5, 2004 at 1 (discussing Congressional and Commission efforts to effectively establish a “hard date” for ending the DTV transition).

interest of all parties – viewers, consumers, broadcasters, unlicensed device manufacturers and operators, and the Commission – to ensure the proposed devices can function as intended.

B. The Commission’s Approach to Preventing Interference is Predicated on a Level of Certainty That Will Exist Only After the DTV Transition Ends.

The Commission’s Part 15 rules are intended to ensure a “low probability” that unlicensed devices will cause harmful interference.¹³ With DTV issues still in flux, however, not only would introducing unlicensed devices into the broadcast spectrum threaten the timetable for the DTV transition, it more fundamentally would increase the probability of harmful interference to users of both licensed and unlicensed services. As previously discussed, interference from unlicensed devices largely is prevented through *ex ante* device design constraints, and an unsettled DTV environment plainly is not the time to lock in unlicensed device designs. Although the *NPRM* proposed requiring unique identification of unlicensed devices operating in broadcast spectrum, the elimination of any actual interference that these devices could cause may be exceedingly difficult, especially with respect to personal/portable devices, which may move before they are even identified as the source of interference. The *NPRM* also does not propose any enforcement mechanism by which identified interference can be eliminated. Once an approved device design is introduced to the market, if the Commission subsequently discovers that an interference problem exists, due to either the design itself or changes occasioned by the DTV transition, it will be too late – both for the manufacturers and consumers who have invested in those unlicensed devices and for television viewers who have lost relied upon service.

¹³ See, e.g., Revision of Part 15 of the Commission’s Rules Regarding Ultra-Wideband Transmission Systems, ET Docket No. 98-153, *First Report and Order*, 17 FCC Rcd 7435, ¶ 6 (2002).

Concerns about significant interference are not fanciful. The Commission has every reason to presume widespread commercial use of new unlicensed devices, so interference problems could be pervasive if they occur. Even with the greater possibility of enforcement against interfering fixed/access devices, the error cost of locking-in a flawed design is high. As the *NPRM* recognized, once approved, unlicensed devices have the potential for “ubiquitous and uncontrolled deployment.”¹⁴ This popularity would greatly increase the cost of errors both in terms of interference to television viewers, and potential harms to those who come to rely on these unlicensed devices, whether as users or service providers.

The introduction of unlicensed devices is likely to create a reliance among users in the continued operation of these devices. Individual consumers may invest in personal/portable devices, and businesses in fixed/access devices to provide services to these individual consumers. If these devices cause interference to viewers of licensed broadcast services during the DTV transition, the Commission must force the unlicensed devices to terminate operation – a difficult task, especially for personal/portable devices. Unexpected interference from licensed users of broadcast spectrum, whether as a result of changes occasioned by the DTV transition or due to insufficiently tested designs used in unlicensed devices, may also significantly curtail the operation of these devices. The possibility of such a result will provide significant disincentives to entrepreneurs and engineers who may otherwise invest in the development of unlicensed devices and applications.

This litany of problems is strong evidence that an unlicensed regulatory regime may not be the best approach for the successful sharing of broadcast television spectrum. Accordingly, the Commission seriously should weigh the benefits and assurances provided by licensed

¹⁴ *NPRM* at ¶ 21.

operations compared to the risks and uncertainties associated with the contemplated unlicensed operations. Under a licensed operation regime, all parties will have the proper and necessary incentive to ensure that devices are functional and that interference is remedied. If the Commission adopts an unlicensed regime, to encourage investment and avoid violating consumers' reliance on these "smart" devices, the Commission should wait for the certainty provided by the end of the DTV transition before allowing unlicensed devices to operate in broadcast spectrum.

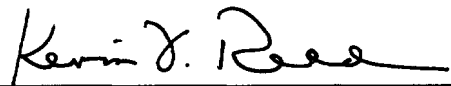
III. THE COMMISSION SHOULD ESTABLISH A TIMETABLE FOR TESTING AND EVALUATING THE USE OF "SMART" DEVICES IN THE BROADCAST SPECTRUM, COORDINATED WITH THE DTV TRANSITION.

Regardless of whether the Commission imposes a licensed or unlicensed regime for shared use of the broadcast spectrum, Cox believes the Commission should establish a timetable of clearly defined stages and/or milestones, coordinated with the close of the DTV transition, for the testing of these "smart" devices. These stages would allow the Commission (and interested parties) to evaluate real devices, real systems, and real data rather than guess about the sufficiency of efforts to prevent harmful interference. They would allow broadcasters to comment meaningfully during the development of these novel devices, and establish the certainty necessary for investment in the new technologies. This approach would help ensure that the deadlines established for completion of DTV channel election and the conclusion of the DTV transition are successfully met. Once it is demonstrated that the devices can function properly and television viewers are not harmed, this approach also would ensure that the devices are marketed swiftly. The Commission has a dual duty to ensure that consumers can rely upon the "smart" devices they purchase and viewers can rely on broadcast service they already receive.

CONCLUSION

When the Commission last comprehensively considered the operation of unlicensed devices in broadcast spectrum, the agency concluded that, due to the "more intensive use of these bands" that may occur with DTV, "prudence dictates a conservative approach."¹⁵ The same conclusion holds true today. Until the end of the DTV transition, the level of certainty that has uniquely contributed to the success of Part 15 devices will not and cannot exist in the broadcast bands. By instituting a methodical approach to the introduction of unlicensed devices to these bands -- coordinated with the schedules and deadlines anticipated for the conclusion of the DTV transition -- the Commission can best ensure the success of unlicensed operations and best prevent interference to television viewers. Accordingly, Cox urges the Commission to refrain from introducing unlicensed devices into broadcast spectrum until clearly defined testing procedures and the DTV transition itself are successfully completed.

Respectfully submitted,
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¹⁵ Revision of Part 15 of the Rules Regarding the Operation of Radio Frequency Devices Without an Individual License, *First Report and Order*, 4 FCC Rcd 3493, ¶ 50 (1989).